total phase rotation over the length of the matched filter is too high, this effectively sets an upper limit on the maximum length of filter that can be used.

In this embodiment of the invention, where the frequency deviation can for example be up to +/−10 ppm, the maximum filter length is set at 64 elements. Thus, with the switches **136**, **138**, **140**, **142**, **154** at the positions A, the four blocks **120**, **122**, **124**, **126** effectively act as four separate filters, each with 64 elements.

In this case, assuming that each of the four blocks **120**, **122**, **124**, **126** produces a correlation amplitude value X, when these are squared in the blocks **144**, **146**, **148**, **150**, and summed in the adder **152**, the output accumulation value is $4X^2$.

When the mobile station has established synchronisation with one base station, and is performing a cell search operation, as described in FIG. **5**, the frequency deviation should not exceed +/−1 ppm, because the crystal oscillator in the frequency generator of the mobile station can be suitably compensated. Therefore, during this phase of operation, the possible frequency deviation does not effectively set any upper limit on the maximum length of filter that can be used.

In this embodiment of the invention, the switches **136**, **138**, **140**, **142**, **154** are set at the positions B, and the four blocks **120**, **122**, **124**, **126** effectively act as a single filter, with 256 elements.

In this case, assuming that each of the four blocks **120**, **122**, **124**, **126** produces a correlation amplitude value X, when these are summed in the adder **152**, and squared in the block **156**, the output accumulation value is $16X^2$, compared with an output accumulation value of $4X^2$ when the four blocks **120**, **122**, **124**, **126** effectively act as four separate filters. There is a corresponding increase of 6 dB in the signal-to-noise ratio of the output value.

If the slot boundary detection algorithm relies on accumulating the power from the matched filter until it reaches a threshold, then this increase in the output accumulation value allows the slot boundary to be found considerably more quickly.

This means that slot synchronisation can be achieved more quickly, that there is reduced power consumption because the algorithm runs for a shorter period, and hence that the battery life of the mobile station can be extended.

What is claimed is:

1. A receiver, for use in a telecommunications system in which transmissions are sent from a plurality of base stations, the receiver comprising:

receiver circuitry, for detecting transmissions from base stations;

a filter, for detecting a correlation between detected transmissions from base stations and a known code, the filter including a plurality of filter segments;

control circuitry, for switching the filter between a first synchronization mode, in which the filter is used divided into segments, when the receiver is first detecting transmissions from a base station to achieve synchronization therewith, and a second synchronization mode, in which the filter is used undivided, when the receiver is synchronized with one base station and is detecting transmissions from an alternative base station; and

means for detecting a power of a correlation between detected transmissions from base stations and a known code,

wherein, in the first synchronization mode, the powers of the correlations of the filter segments are detected and added together to form an output value, and, in the second synchronization mode, the correlations of the filter segments are added together and the power of the added correlations is detected, to form an output value.

2. A receiver as claimed in claim **1**, for use in a CDMA telecommunications system, wherein the filter detects a correlation between Long Code Masked symbols transmitted from base stations and the known code.

3. A method of controlling a receiver, for use in a telecommunications system in which transmissions are sent from a plurality of base stations, the method comprising:

detecting transmissions from base stations;

using a filter, for detecting a correlation between detected transmissions from base stations and a known code, the filter including a plurality of filter segments;

switching the filter between a first synchronization mode, in which the filter is used divided into segments, when the receiver is first detecting transmissions from a base station to achieve synchronization therewith, and a second synchronization mode, in which the filter is used undivided, when the receiver is synchronized with one base station and is detecting transmissions from an alternative base station; and

in the first synchronization mode, detecting the powers of the correlations of the filter segments and adding them together to form an output value, and, in the second synchronization mode, adding together the correlations of the filter segments and detecting the power of the added correlations, to form an output value.

4. A method as claimed in claim **3**, for use in a CDMA telecommunications system, wherein the filter detects a correlation between Long Code Masked symbols transmitted from base stations and the known code.

5. A method as claimed in claim **3**, further comprising detecting a synchronisation position of the transmissions based on the output value.

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